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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/663,845	09/17/2003	Koichi Kawamura	Q77366	2854

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EXAMINER

JACKSON, MONIQUE R

ART UNIT	PAPER NUMBER
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1773

DATE MAILED: 05/02/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

5

Office Action Summary	Application No. 10/663,845	Applicant(s) KAWAMURA ET AL.	
	Examiner Monique R. Jackson	Art Unit 1773	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 February 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 2/22/06 has been entered. Claims 1-4 are pending in the application.

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 103

3. Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Horowitz et al generally for the reasons recited in a prior office action and restated below.

Horowitz et al teach a method of metal plating polymeric substrates wherein polyfunctional monomers form a grafted polymer layer on the surface of the substrate and then metal plating is conducted onto the grafted polymer layer wherein the grafting and polymerization is initiated by a very small amount of silver ions such that metallic silver as well as silver ions are held by ionic or polar interactions with the functional groups of the grafted chains, wherein the polyfunctional monomers may be selected from a number of monomers including pyridine compounds (Abstract; Col. 2, lines 32-49; Col. 5, lines 1-23.) Horowitz et al specifically describe the reaction steps noting that a graft polymer is formed in Reaction 5 and then noting that metallic silver is combined with the graft polymer layer and tightly bound in the interstices of the grafted chains of the polymeric coating (*hence adsorbed fine particles capable*

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of polarly bonding to the polar group; Col. 3-4.) Horowitz et al further teach that the small amount of very fine metallic silver provides nucleation sites for the electroless deposition of metal onto the coating wherein copper crystals may be deposited or adsorbed onto the coating facilitated by the metallic silver (Col. 2, line 56-Col. 3, line 12; Col. 4, lines 14-68.) Hence, one having ordinary skill in the art at the time of the invention would have been motivated to select any of the functional monomers taught by Horowitz et al including pyridine compounds and wherein at the interface, the invention taught by Horowitz et al reads upon a layer comprising the graft polymer and adsorbed fine metal particles capable of polarly bonding to the polar groups of the side chains of the grafted polymer.

Response to Arguments

4. Applicant's arguments with respect to claims 1-4 have been considered but are not persuasive. The Applicant first argues that the copper layer taught by Horowitz et al is a simple continuous layer and hence does not read upon the amended claim to a composite layer comprising the graft polymer and adsorbed fine particles and more particularly to a layer wherein the graft polymer is present between the adsorbed fine particles. However, the Examiner notes that the instant claim does not recite that the graft polymer is present between the adsorbed fine particles and hence one can view the interface layer between the grafted polymer and the layer of copper as a layer comprising both particularly since the instant claims only recite that the adsorbed particles are "capable of polarly bonding". Further, with respect to Applicant's arguments that a continuous copper layer is not the same as a layer of adsorbed fine particles, it is noted that the continuous copper layer taught by Horowitz et al is formed by adsorbing very fine copper crystals or particles to the grafted polymer surface and hence is a layer of adsorbed

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particles and cannot be directly compared to a sheet of glass vs. a pile of sand considering sand is fused in order to produce the glass and not just piled on top of itself. As for Applicant's arguments with respect to the finely divided metallic silver not being the same as a layer having thereon adsorbed fine particles, the Examiner notes once again the teachings of Horowitz et al as recited above, particularly with reference to Reaction 6 and maintains that at the interface, the invention taught by Horowitz et al reads upon the instantly claimed invention. In terms of Applicant's arguments that the size of the metallic silver is considerably smaller than the instantly claimed adsorbed particles, the Examiner notes that particle size is not claimed. Lastly, the Applicant argues that Horowitz et al would not motivate a person of ordinary skill in the art to select N-vinyl pyridine as the polymerizable monomer in preference to or rather than all of the other monomers disclosed in Horowitz et al beginning at column 5, line 8. However, the Examiner notes that Horowitz et al clearly recite N-vinyl pyridine in the disclosure as well as in the claims hence leading one skilled in the art to select N-vinyl pyridine from the list of suitable monomers and since there is no clear showing on the record of any unexpected results with regards to N-vinyl pyridine, the Examiner maintains her position that the instant invention would have been obvious over the teachings of Horowitz et al.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Monique R. Jackson whose telephone number is 571-272-1508. The examiner can normally be reached on Mondays-Thursdays, 8:00AM-4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Carol Chaney can be reached on 571-272-1284. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Monique R. Jackson
Primary Examiner
Technology Center 1700
April 28, 2006